



# AV-50

## Owner's Manual

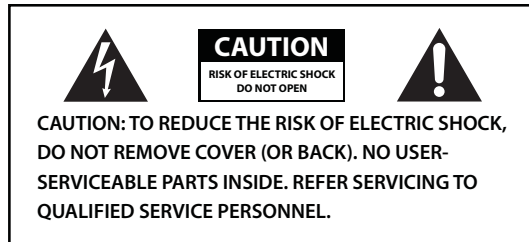
February 2010

[www.stewartaudio.com](http://www.stewartaudio.com)

# Important Safety Instructions

Before using your Stewart Audio Inc. Power Amplifier, please read this **Owner's Manual** carefully to ensure optimum trouble-free performance.

**WARNING: TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT EXPOSE THIS AMPLIFIER TO RAIN OR MOISTURE. DANGEROUS HIGH VOLTAGES ARE PRESENT INSIDE THE ENCLOSURE. DO NOT OPEN THE CABINET. REFER SERVICING TO QUALIFIED PERSONNEL ONLY.**



The lightning bolt within arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of un-insulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electrical shock to person.



The exclamation point within an equilateral triangle, is intended to alert the user to the presence of important operating and maintenance (servicing) instruction in the literature accompanying the appliance.

## Important Safety Instruction – Please Read Prior to Product Installation.

1. Installation should be performed by a trained and licensed professional to insure safe and lasting operation.
2. All of the safety and operating instructions should be read before the amplifier is installed or operated. Retain these instructions for future reference. All instructions should be followed; all warnings on the amplifier and in the operating instructions should be adhered to.

3. The amplifier should be situated so that its location and position does not interfere with its proper ventilation. For example, the amplifier must not be placed on a rug, bed, sofa or similar surface that impedes airflow across the chassis. Airflow through the ventilation openings should be unobstructed.
4. This amplifier should not be used near water, for example, near a bathtub, in a wet basement, near a swimming pool, etc. This amplifier is intended to be operated in a controlled indoor environment.
5. Do not place the amplifier near heat sources such as radiators, heat registers, stoves, or other appliances that produce heat.
6. The amplifier should only be connected to 120 VAC, 60 Hz power supply. Do not defeat the ground or polarization of the power plug.
7. Route power cord and other cables so that they are not likely to be walked on, tripped over or stressed. Pay particular attention to condition of cords and cables at plugs and at the point where they exit the amplifier. To prevent risk of fire or injury, damaged cords and cables should be replaced immediately.
8. Clean the amplifier with a clean, damp cloth. Do not use solvents or abrasive cleaners. Never pour any liquid on the amplifier.
9. When left unused for a long period of time, the power cord should be unplugged from the outlet.
10. Damaged Amplifiers requiring service should be repaired by a qualified service technician when:
  - a. The power cord or AC plug has been damaged.
  - b. Objects have fallen, or liquid has spilled into the unit.
  - c. The amplifier has been exposed to rain or other moisture.
  - d. The amplifier does not appear to operate normally or exhibits a marked change in performance.
  - e. The amplifier has been dropped or the enclosure damaged.
11. The user should not attempt to service the amplifier beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

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***This amplifier proudly designed and manufactured in the USA.***

# 1 Welcome



Congratulations on the purchase of your new Stewart Audio AV Series power amplifier. This amplifier has been designed and built to provide you with years of high-quality audio performance and trouble-free operation. If after reading this manual you should have any questions concerning amplifier installation and operation, please contact your Authorized Stewart Dealer, or you may contact us directly using the contact information provided on the back of this manual.

## 1.1 Features

Your Stewart Audio AV Series amplifier is the result of years of experience in the design and manufacture of quality amplifiers. As such it provides a combination of performance and operational benefits that simply cannot be found in conventional amplifiers.

- Switching Power Supply—for efficiency, size reduction, dependability
- Superior Thermal Protection—effective protection with no noisy fan and no untimely shutdowns
- Full Complimentary Class A/B Amplifier—utilizes integrated Darlington Pairs.
- High Dissipation Output Devices—insures operation well within their S.O.A. (Safe Operating Area) for effortless operation and device longevity

## 1.2 Using this Manual

In order to obtain maximum performance from your AV Series Amplifier, please take time to read this brief owner's manual and carefully follow the guidelines for connection and operation.

This manual provides you with the information necessary to safely install and operate your new AV Series amplifier in the most common scenarios. If you find yourself requiring additional assistance, please feel free to contact your Authorized Dealer, or you may contact us directly using the contact information provided on the back of this manual.

## 2 Setup

### 2.1 Setup Precautions



**CAUTION:** Before installing your amplifier, make sure that you have read the Important Safety Precautions at the beginning of this manual.

### 2.2 Amplifier Installation

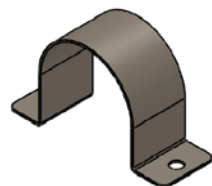
#### 2.2.1 Pole-Mount Installation

The AV 50 amplifier is the first amplifier in the Stewart Audio family of amplifiers to have the option of pole-mounting. This provides a secure and convenient way to provide quality sound reinforcement for other pole-mounted equipment including video projectors.

Using the optional pole-mount kit (Part Number: AV-Pole), secure the amplifier as shown in the following diagrams.



**CAUTION:** Use only the screws provided in mounting brackets to the amplifier. Do not overtighten.



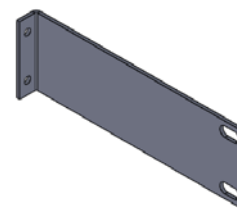
Part Number: AV-Pole

#### 2.2.2 Rack-Mount Installation

The AV 50 may also be rack-mounted in a standard 19" (48.3cm) equipment rack using the optional rack-mount kit (Part Number: RMK-50-S). The amplifier takes up 1U (1.75") of vertical space.

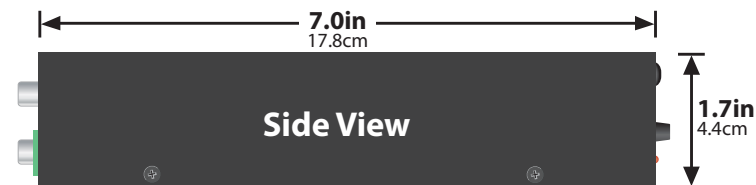
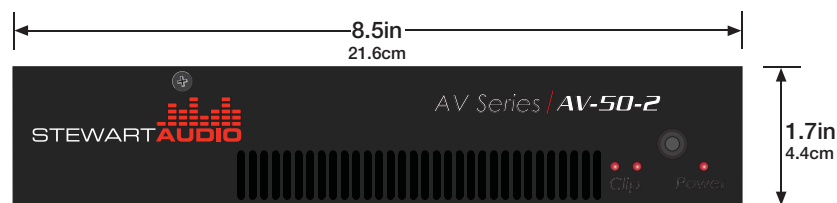


**CAUTION:** Use only the screws provided in mounting brackets to the amplifier. Do not overtighten.



Part Number: RMK-50-S

#### 2.2.3 Product Dimensions



## 2.3 Proper Cooling Considerations

Because the AV 50 regulates its temperature using convection cooling and no fans, the amplifier must be given adequate space to allow for proper airflow. Do not stack the amplifiers on top of each other or mount it in a way that other equipment will block airflow through the case.

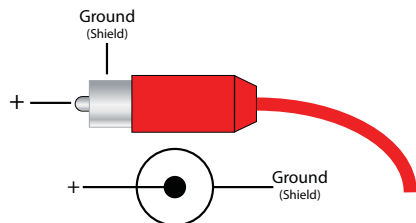


**CAUTION: Inadequate airflow to the amplifier can cause the amplifier to overheat and potentially become damaged in the process. Be sure to provide plenty of air space to allow for convection cooling.**

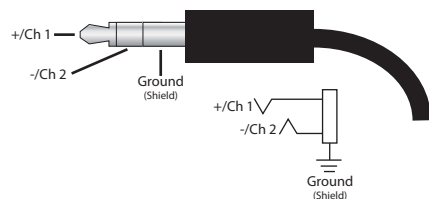
## 2.4 Input Connections

The AV 50 allows for two different type of unbalanced input connections (RCA and 3.5mm TRS) to be used for the input signal. However, only one input type may be used at a time.

RCA, or phono connections allow for mono inputs to be connected to each of the two channels. These inputs are unbalanced and should be wired as shown in the following diagram.



A single 3.5mm TRS (stereo) connector will allow for two unbalanced signals to be sent to the amplifier using only one cable. The tip of the connector (the left channel) will be sent to Channel 1. The ring of the connector (the right channel) will be sent to Channel 2. Please refer to the following diagram for wiring instructions.



## 2.5 Output Connections

Stewart Audio recommends using high-quality, heavy-gauge speaker wire and connectors to send the output signal of your amplifier to the speakers. Use the following table as a guideline when selecting your wire gauge.

| Distance     | Wire Gauge |
|--------------|------------|
| Up to 25 ft. | 16 AWG     |
| 26-40 ft.    | 14 AWG     |
| 41-60 ft.    | 12 AWG     |
| Over 60 ft.  | 10 AWG     |

Speaker leads connect by means of “Phoenix” type block connectors supplied with the unit. Strip speaker leads 1/4” and insert into connector observing proper polarity. With a small, flat-blade screwdriver, tighten the screw until the leads are held securely in place. Inspect for possible shorts or broken wires.

## 2.6 Wiring Configurations

### 2.6.1 Dual Mode

Your Stewart AV-Series amplifier is factory-configured to work as a dual-mode (stereo) amplifier. This allows the amplifier to power two speakers with independent source inputs and gains.

### Input Connections

If using RCA (phono) input connectors, connect them to the Channel 1 and Channel 2 inputs on the rear of the amplifier. If using the 3.5mm TRS connector, connect it to the appropriate socket.

**Do not connect a signal to both inputs as this could cause damage to your amplifier.**

### Output Connections

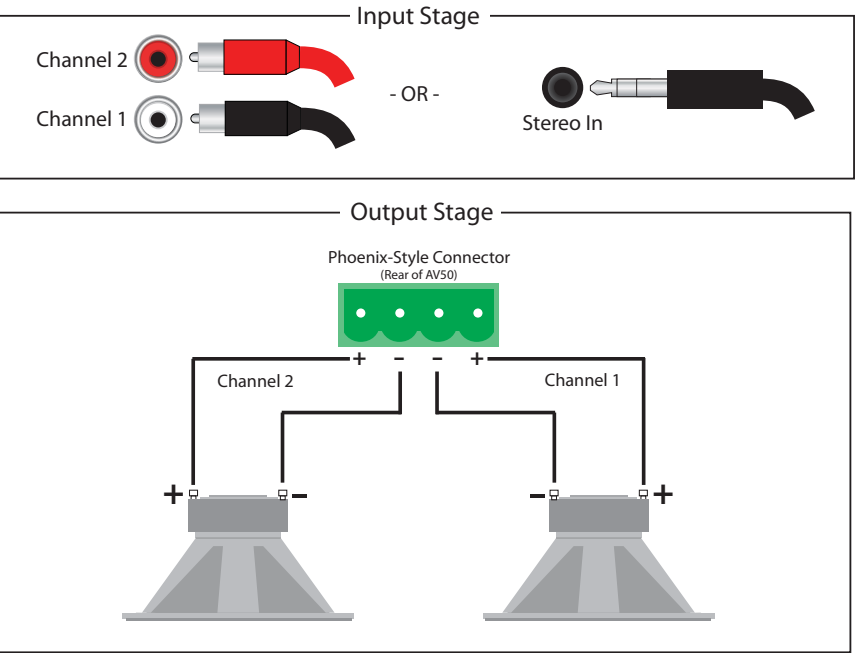
Prepare the speaker leads as described in **section 2.5**. The speaker leads should be attached to the Phoenix block connector with regard to their polarity. See diagram for further clarification.

2.6.1 Dual-Mode Operation (cont.)

Slide the rear-panel switch marked Bridge/Mono/Stereo to the Stereo position. Be sure the power button is off (out), then plug the line cord into a grounded AC outlet.

The amplifier is now ready for Dual-mode operation.

Dual-Mode Wiring Setup



2.6.2 Single-Mode Operation

Your Stewart AV-Series amplifier may also be configured for Mono Operation. This allows the amplifier to power two speakers with independent gain settings using only one input.

Input Connection

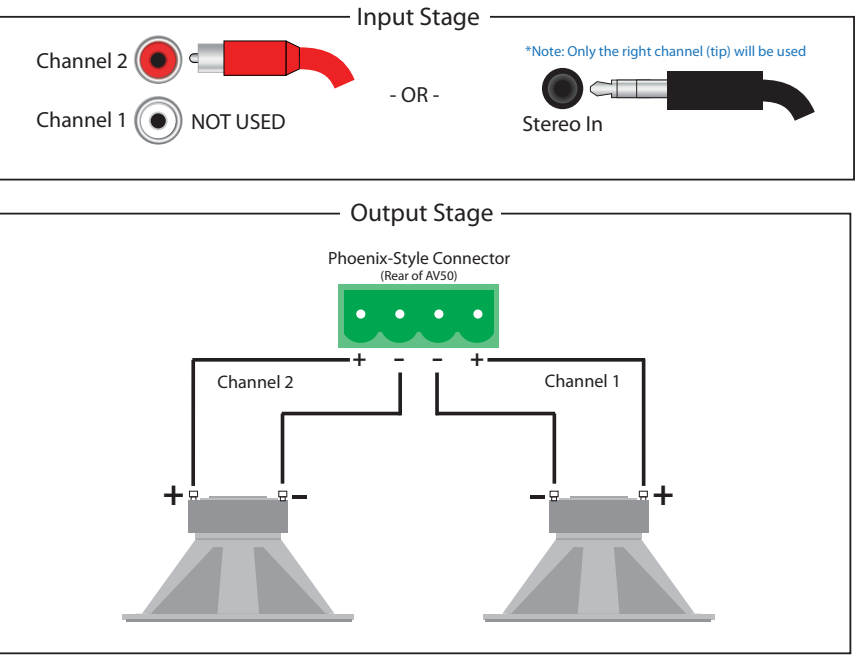
The input signal should be connected to Channel 2 if using the RCA (phono) connectors. Nothing should be connected to Channel 1. If using the 3.5mm stereo input, the right (ring) channel's signal will be used.

Output Connections

Prepare the speaker leads as described in **section 2.5**. The speaker leads should be attached to the Phoenix block connector with regard to their polarity. See diagram for further clarification.

The amplifier is now ready for Single-mode operation.

Single-Mode Wiring Setup



## 2.6.3 Bridge-Mono Operation

Your Stewart AV-Series amplifier has the option to run as a dual-mode (stereo) channel amplifier as well as a more powerful single (mono) channel amplifier. This mode is known as bridge-mono and requires a different wiring setup than stereo or mono operation. The difference between standard mono operation is that the amplifier will only be powering one speaker. This allows for more wattage (100W @ 8Ω) to be provided to a single output channel.

### Input Connections

The input signal in bridge-mono mode should be connected to Channel 2 if using RCA inputs. Do not connect any input to Channel 1 of the amplifier. If using the 3.5mm stereo input, the right (ring) channel's signal will be used.

### Output Connections

Prepare the speaker leads as described in **section 2.5**. The speaker leads should be attached to the positive terminals of both channels (terminals 1 and 4). Nothing should be attached to speaker terminal 2 and 3. See diagram for further clarification.

### Put Amplifier into Bridge-Mono Mode

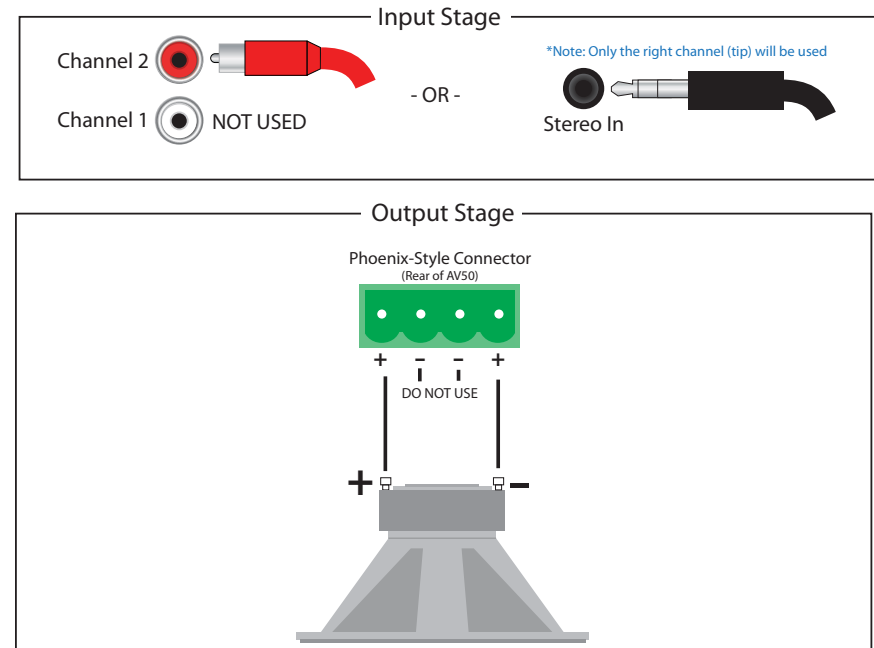
Slide the rear-panel switch marked Bridge/Mono/Stereo to the Bridge position. Be sure the power button is off (out), then plug the line cord into a grounded AC outlet.

The amplifier is now ready for Bridge-mode operation.



**CAUTION: To prevent loudspeaker damage, ensure that the speaker is rated for the higher-wattage output supplied in Bridge-Mono mode.**

## Bridge-Mono Wiring Setup



# 3 Operation

## 3.1 Operating Precautions

1. Before use, your amplifier must be configured for proper operation, including input and output wiring hookup. Improper wiring can result in damage to equipment or potentially harm to the operator. Consult section 2 for setup instructions.
2. Tampering with the circuitry, or making unauthorized changes is not only dangerous but may also violate local regulations.
3. Use care when making connections between the amplifier and the input or output equipment. Using equipment that is not capable of handling the output wattage may lead to permanent damage.

**NOTE:** Stewart Audio will not be held responsible for damage to your AV 50 or connected equipment if the instructions in this manual are not followed.

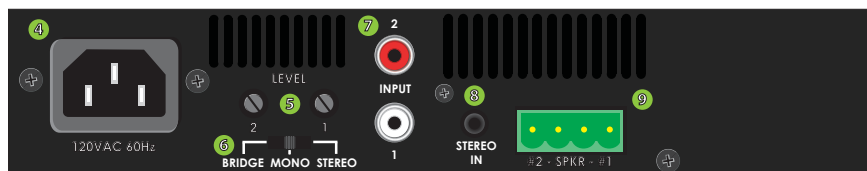
## Controls, Indicators, and Connectors

Front View



- 1 Clip indicator light
- 2 Power on/off switch
- 3 Power indicator light

Rear View



- 4 Power cable socket (IEC C13)
- 5 Channel volume knobs
- 6 Speaker mode switch
- 7 RCA (phono) channel inputs
- 8 Stereo 3.5mm input
- 9 Speaker outputs (Phoenix-type connector)

## 3.2.1 Indicators

The AV50 has 3 front panel LED indicators. The first is the power indicator which will illuminate when power is supplied to the amplifier. The next 2 LED indicators are the “Clip” indicators, one for each channel. These lights will indicate that the input signal is too “hot” and will sound distorted when amplified. To fix this, the gain should be reduced at the preamp or mixer level.

## 3.2.2 Controls

The AV 50’s front panel has only one control, a push button to control the power of the unit. When the push button is depressed, the power is on. When the button is push button is out, the power is off.

The rear panel contains two input sensitivity knobs as well as a mode switch. The amplifier is set to run off of a line-level source and the sensitivity should be adjusted for optimum performance. To adjust this knob, you will need a small flat-head screwdriver. While a typical program source level is present, spin the rotary knob as far clockwise as you can without hearing distortion or without the “Clip” indicator illuminating. If the signal is distorting and the knob is all the way counter-clockwise, adjust the gain down at the source level.

The mode switch on the rear of the amplifier should only be adjusted during the primary installation. It switches the amplifier between the three output modes: Stereo, Mono, and Bridge-Mono. Refer to section 2.6 of this manual for more information.



## 4 Troubleshooting

### **Problem: Power indicator does not turn on.**

**Procedure:** Check that the amplifier is plugged into a live outlet and that the power switch is in the down position. After you have ensured that it is not a power issue, disconnect any speakers. If the amplifier turns on after a few seconds delay, then the problem is in the output connection. Check wiring and speakers for short circuits.

### **Problem: No output on one or both channels; Power indicator is lit.**

**Procedure:** Check that level controls are not turned down. Check that input and output connections are secure. Check that the mode switch (Stereo, Mono, Bridge) is in the correct mode.

### **Problem: Output sound is distorted or cracking.**

**Procedure:** Check all cables for damage or loose connections and reduce the gain on the input signal at the mixer or preamp level. Replace the cables and loudspeakers temporarily to see if this resolves the problem. If problem still exists, contact your Authorized Dealer for service.

If after reading this troubleshooting section you are unable to restore proper function, return it to your Authorized Dealer for service. Refer to **section 6** for instructions.

## 5 Technical Specifications

| Maximum Output, 20Hz - 20kHz            |                      |
|---|----------------------|
| Stereo                                  | 25W @ 8Ω per channel |
|   | 50W @ 4Ω per channel |
| Bridged Mono                            | 100W @ 8Ω            |
| Frequency Response +/- 0.5dB, 1W        | 30Hz-20kHz           |
| Bandwidth +/- 3.0dB                     | 10Hz-50kHz           |
| Noise (A weighted, any mode)            | >100dB               |
| THD (8Ω) 20Hz-20kHz                     | <0.1 %               |
| Input Impedance                         | 10kΩ                 |
| Input Sensitivity for Rated Output (8Ω) | 1V                   |
| Slew Rate (Stereo Mode)                 | >30V/ms              |
| Damping Factor                          | >200/8Ω              |
| Number of Channels                      | 2                    |
| Input Connectors                        | RCA, 3.5mm TRS       |
| Output Connectors                       | Phoenix Block        |
| Power Requirements (8Ω/channel)         | 120V AC 100W         |
| Power Supply Design                     | High-speed Switching |
| Dimensions                              |                      |
| Height                                  | 1.7in (4.4cm)        |
| Width                                   | 8.5in (21.6cm)       |
| Depth                                   | 7.0in (17.8cm)       |
| Weight                                  | 2.8lbs (1.6kg)       |

Stewart Audio reserves the right to change features and specifications without notice.

## 6 Warranty Information

### 6.1 Warranty Summary

All Stewart Audio amplifiers and accessories, unless excluded in this summary, are covered by a 3-year limited warranty on parts and labor from the date of purchase. In order to be eligible for warranty repairs, the amplifiers and accessories must have been purchased through an authorized Stewart Audio dealer and submitted by the original purchaser. This warranty is only valid in the country in which the amplifier was purchased.

#### 6.1.1 Eligibility Requirements.

Stewart Audio warrants against all malfunctions which come as a result of component or manufacturer defect. The amplifier is also covered from all failures which arise during the warranty period (3 years from date of purchase) that are not a result of misuse. The following actions will void your warranty:

- The power cord or AC plug has been damaged through misuse.
- The amplifier has been exposed to moisture or extreme temperatures.
- The amplifier has been dropped, items have been dropped on the amplifier, or the enclosure has been damaged.
- The amplifier has been opened by the operator.
- The amplifier was improperly packaged when sending to the factory for repair, resulting in damage.
- Any of the precautions or instructions found in this manual were not followed.

Damages resulting to the amplifier which are not covered under this warranty can be factory-repaired at cost to the customer. Use the contact information below to initiate the repair process.

### 6.2 Return Procedure

This section includes the return procedures which must be followed in order to prevent processing delay or cost to the customer. Please read the entire section before contacting Stewart Audio for returns.

#### 6.2.1 Return Authorization Number

All returns to the factory for service must be accompanied by a Return Authorization (RA) number. One can be obtained by contacting Stewart Audio at (209) 588-8111 or via e-mail at [support@stewartaudio.com](mailto:support@stewartaudio.com).

**NOTE: Any defective products received without an RA number will be returned to sender at their expense.**

If Stewart Audio is unable to contact the sender in 14 days, the merchandise will be considered scrap and may be disposed of.

#### 6.2.2 Shipment Instructions

If Stewart Audio requests that you ship the defective product back to their service center, please refer to the guide below. To ensure prompt warranty service, be sure to follow all instructions.

1. Return Authorization (RA) is required for product being sent to the factory for service.
2. See packing instructions in **section 6.2.3**.
3. Ship the defective product using a method which provides for order tracking or order confirmation. The service center is located at the following address:

Stewart Audio  
14397 Cuesta Court Suite D1  
Sonora, CA 95370

4. Use a bold black marker and write the RA number on three sides of the box.
5. Record the RMA number for future reference. The RA number can be used to check the repair status.

#### 6.2.3 Packaging Instructions

Should Stewart Audio request that you ship your product to their service center, these instructions must be followed in order to ensure safe delivery. If they are not followed, Stewart Audio assumes no responsibility for damaged goods and/or accessories that are sent with your unit.

6.2.3 Packaging Instructions (cont.)

- 1. Please write the RA number on three sides of the box. Include the Stewart Audio RA number inside the box and a brief description of the problem.
- 2. Do not ship any accessories (manuals, cords, hardware, etc.) with your unit. These items are not needed to service your product. Stewart Audio will not be held responsible for these items if they are returned with the amplifiers.
- 3. When shipping your amplifier, it is important that it has adequate protection. We recommend you use the original packing material when returning the product for repair. If you do not have the original box, see number 4.
- 4. If you provide your own shipping pack, the minimum recommended requirements for materials are as follows:
  - a. 275 P.S.I. burst test, Double-Wall carton that allows for 2-inch solid Styrofoam on all six sides of unit or 3 inches of plastic bubble wrap on all six sides of unit.
  - b. Securely seal the package with an adequate carton sealing tape.
  - c. Do not use light boxes or "peanuts".

**NOTE: Damage caused by poor packaging will not be covered under warranty.**

6.2.4 Estimate Approval

An estimate for all non-warranty repairs will be provided to the customer once the unit has been shipped to the factory. The customer is responsible to approve this estimate within 7 days. If the repairs are not approved within 14 days, Stewart Audio reserves the right to consider the unit scrap and may discard it.

6.2.5 Payment of Non-Warranty Repairs

Payment for non-warranty repairs must be submitted to Stewart Audio before the product will be returned to the customer.

Stewart Audio Product Line

| Sub-Compact Products        |   |                   |   |
|-----------------------------|---|-------------------|---|
| AV 25-2                     | 35W x 2 @ 4 Ohms<br>25W x 2 @ 8 Ohms      | CVA 25-1          | 25W x1 @ 25V/70V  |
|                             |   | CVA 50-1          | 50W x1 @ 25V/70V  |
| Half-Rack Products          |   |                   |   |
| Compact Series              |   | PA Series         |   |
| DA70-2                      | 70W x 2 @ 4 Ohms<br>35W x 2 @ 8 Ohms      | PA50B             | 50W x 2 @ 4 Ohms<br>25W x 2 @ 8 Ohms<br>100W x 1 @ 8 Ohms bridged |
|                             |   |                   |   |
| DA70-4                      | 70W x 4 @ 4 Ohms<br>35W x 4 @ 8 Ohms      | PA100B            | 90W x 2 @ 4 Ohms<br>50W x 2 @ 8 Ohms<br>180W x 1 @ 8 Ohm bridged  |
|                             |   |                   |   |
| DA770-2                     | 80W x 2 Constant Voltage<br>70.7V rms out | AV Series<br>AV50 | 50W @ 4 Ohms<br>25W @ 8 Ohms<br>100W @ 8 Ohms bridged             |
|                             |   |                   |   |
| 1U/2U Products              |   |                   |   |
| World Series                |   | Contractor Series |   |
| World 600                   | 190W x 2 @ 4 Ohms<br>110W x 2 @ 8 Ohms    | CVA7400           | 200W x 2 Constant Voltage<br>70.7V rms out                        |
|                             |   |                   |   |
| World 1.2                   | 350W x 2 @ 4 Ohms<br>200W x 2 @ 8 Ohms    | CVA7800           | 400W x 2 Constant Voltage<br>70.7V rms out                        |
|                             |   |                   |   |
| World 1.6                   | 550W x 2 @ 4 Ohms<br>300W x 2 @ 8 Ohms    | World 600R        | Recessed controls   |
|                             |   |                   |   |
| World 2.1                   | 650W x 2 @ 4 Ohms<br>400W x 2 @ 8 Ohms    | World 1.2R        | Recessed controls   |
|                             |   |                   |   |
| Custom Amps Contact factory |   |                   |   |

For more information, contact  
sales@stewartaudio.com